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**Climate Smart Tea (*Camellia sinensis*) Cultivation Practices in Rathnapura District**

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**Abstract**

Tea (*Camellia sinensis*) cultivation in Sri Lanka, which plays a key role in the nation's economy, is facing unprecedented challenges due to the impacts of climate change. Climatic changes led to adverse outcomes, including deteriorating soil conditions marked by erosion, hindered tea plant growth, reduced quality, yield and market value of the tea. For many small-scale tea farmers, tea cultivation is their primary source of income. Climate-related challenges make their livelihoods more vulnerable, with poverty, especially extreme rain led to high maintenance costs and some cultivators to abandon tea plucking, hindering maintain efforts due to insufficient facilities and high expenses. Therefore, mitigating climate challenges is important. Objectives of this study is to find out the effects of climate change on tea cultivation, identify awareness levels and explore climate smart mitigation practices employed in Rathnapura District. Primary data was collected using in-depth interviews and field observations. Secondary data was collected from Tea Research Institute (TRI) databases. The region faces challenges from climate change, with high rainfall, occasional temperature fluctuations, droughts, and flood events. Terracing techniques are utilized to create level surfaces, effectively controlling soil erosion by slowing the flow of rainwater down slopes, cover cropping with grasses and legumes being planted between tea rows to shield the soil from the erosive force of raindrops, efficient drainage systems, such as trenches and channels, redirect excess rainwater away from the fields, preventing waterlogging, shade management, through strategic tree planting, and the use of mulch, tea pruning practices, aid in protecting tea bushes from heavy rainfall, planting high rainfall resilience varieties and preserving soil structure. Tea cultivators lack awareness regarding climate-smart practices and have limited knowledge about TRI recommendations. The research findings important to empower local tea farmers with innovative adaptation, thereby enhancing the adaptive capacity of the tea industry.

**Keywords:** Climate smart, Tea cultivation, Climate changes, High rainfall, Innovative adaptation